

Item 10. Coastal Submarine Discharge

The CSM that underlies the current interim numerical groundwater and LNAPL models and will underlie the final versions needs to represent albeit in an approximate manner the principle features and processes that affect groundwater flow and contaminant migration. There is uncertainty regarding the downgradient outflow boundary, which as currently represented in the model may lead to a bias toward discharge occurring in the northeast Pearl Harbor area.

As noted elsewhere, gradients simulated by the interim flow model do not comport well with measured gradients in and around Red Hill facility. While this is in part related to conditions local to Red Hill, analyses conducted using the interim model also exhibit high sensitivity to conditions downgradient of Red Hill. The interim model represents the downgradient discharge (outflow) from the model via a fairly uniform general head boundary (GHB) with some areas exhibiting intervening high-conductivity cap rock, which condition seems to be contradicted by some available information.

There are insufficient available data regarding the distribution and properties of downgradient discharge outflow boundary to accurately and uniquely represent it in the groundwater model. However, sensitivity analyses completed with the interim model indicate this area may be important to regional flow patterns. Therefore, available information must be interpreted in the context of the CSM and AOC to provide an appropriate representation for purposes of the flow and transport modeling.

Although uncertain in extent and character, it is important to represent the downgradient outflow conditions as accurately as possible, using as one basis the CSM regarding the distribution and properties of these features, and also other sources of information (Inset Figure 10.1). The solution likely lies in two parts: First, re-interpretation of the available data, and expanded use of sensitivity analysis and model calibration to help identify probable geometries and properties. Second, based on the anticipated results of sensitivity analyses conducted with this updated representation of these features, consideration should be given to methods of data collection to better constrain the likely presence, extent and properties of these features.

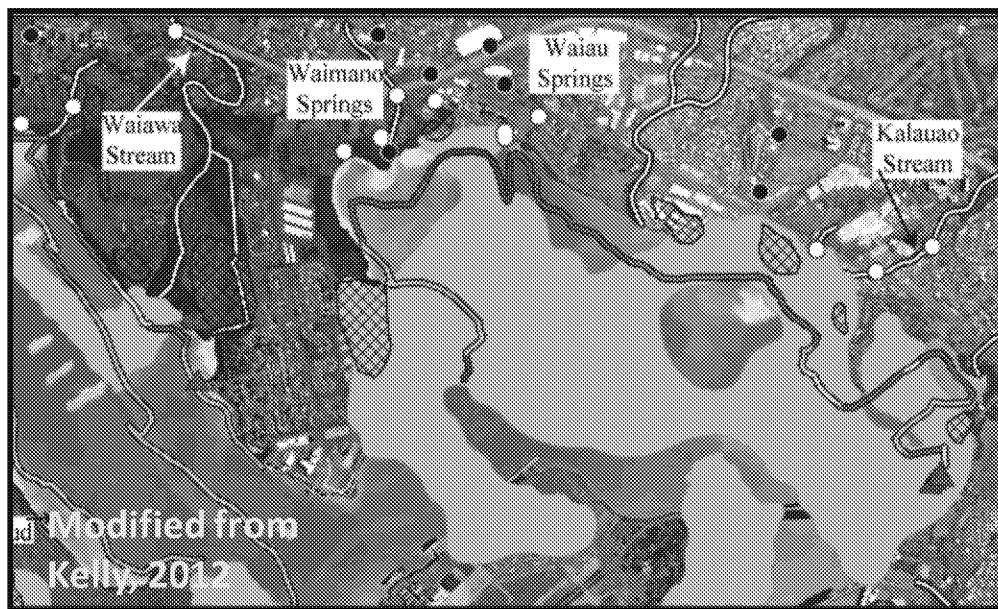


Figure 10.1 Example Figure Illustrating Variable Discharge to Pearl Harbor